

REMARKS

Claims 1-5, 7-15, and 17-23 remain in the application. Claims 1 and 12 have been amended by incorporating therein the limitations of Claims 6 and 16, respectively, which have accordingly been canceled. The dependencies of Claims 7 and 17 have been amended to be consistent with the foregoing changes. Claims 8 and 18 have been amended to overcome a §112 rejection, as discussed below.

The specification is amended on page 2, paragraph 0004 to overcome an informality, as discussed below, and on page 4, paragraphs 0016 and 0018 to overcome a §112 rejection, as discussed below. The specification is also amended on page 5, paragraph 0022, to give an example of the elevated temperatures that the thermoset plastic lens 10 is likely to be subjected to in subsequent processing, namely, re-flow soldering operations, as described on page 3, paragraph 0005.

The title is amended, as required by the Examiner.

Claims 1-23 have been subject to restriction under 35 USC 121 as follows:

- Group I: Claims 1-11;
- Group II: Claims 12-21; and
- Group III: Claims 22-23.

On February 21, 2003, the undersigned made a provisional election, with traverse, to prosecute the Group I set of claims (Claims 1-11). That election is hereby affirmed.

In accordance with MPEP 821.04, in the event that Claim 1 is allowed, Applicants respectfully request rejoinder of Claims 12-21, and for that purpose, Claim 12 is amended to be include all of the limitations of product Claim 1, as amended herein.

Reconsideration of the restriction requirement is respectfully requested.

The Examiner contends that the title of the invention is not descriptive, and requires a new title.

Applicants have amended the title from "INTEGRATED FIELD FLATTENER FOR SENSORS" to --OPTICALLY TRANSPARENT THERMOSET PLASTIC FIELD FLATTENER LENS FOR SENSOR DIE PACKAGES--. If the Examiner objects to this new title, he is respectfully requested to suggest acceptable language.

The Examiner objects to the disclosure because on page 2, line 2, the number "7,117,705" should read --6,117,705-- to be consistent with the corresponding patent submitted in the IDS.

Applicants have so amended paragraph 0004 of the disclosure.

Claims 6-8 are rejected under 35 USC 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 6 is canceled and its limitations incorporated in Claim 1.

Regarding Claim 8, the Examiner contends that the term "anti-aliasing surface" is not mentioned in the specification, nor is it said to be well-known in the art.

Applicants respectfully disagree. The specification on page 4, lines 14-15 (paragraph 0018) specifically states: "The lens 10 may also have hybrid surfaces consisting of diffractive and/or reflective microlenses or antialiasing features". Paragraph 0018 of the specification is amended (1) to change "antialiasing" to --anti-aliasing-- and (2) to specify that lenses having surfaces that include anti-aliasing features are well-known in the optics art. Applicants had not realized that a term of art that is so well-known in the optics art needed to be specifically so denoted. Applicants submit that no new matter is introduced by the amendments to paragraph 0018.

Regarding Claim 6 (now Claim 1), the Examiner contends that the term "field flattener" is not described in the specification nor is it said to be well-known in the art.

Field flatteners are so well-known in the optics art that Applicants had not realized that this term needed to be so denoted. Paragraph 0016 is amended to specify that field flattening lenses are well-known in the art. A field flattener, as disclosed in paragraph 0018, "operates by introducing the correct amount of field curvature to balance that of a lens placed in front of it". Accordingly, Applicants submit that the term is adequately described in the specification. Applicants submit that no new matter is introduced by the amendment to paragraph 0016.

Reconsideration of the rejection of Claims 1, 7, and 8, as amended, under 35 USC 112, first paragraph, is respectfully requested.

Claims 6-8 are rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Claim 6 is canceled and its limitations incorporated in Claim 1.

Regarding Claim 6 (now Claim 1), the Examiner contends that it is unclear what the term "field flattener" is intended to mean.

Applicants have responded to this objection in the previous rejection.

Regarding Claim 8, the Examiner contends that it is unclear what the term "anti-aliasing surface" is intended to mean.

Applicants have responded to this objection in the previous rejection.

Reconsideration of the rejection of Claims 1, 7, and 8, as amended, under 35 USC 112, second paragraph, is respectfully requested.

The Examiner has not applied art against Claims 6-8 "as the scope of the limitations is so unclear".

Applicants submit that any person skilled in the optics art would be well-aware of the terms that the Examiner objects to. Further, the term "field flattener" (or "field flattening lens") is adequately described in the specification so that the Examiner should have been able to apply art as appropriate.

Claims 1-5 are rejected under 35 USC 103(a) as being unpatentable over Wu (U.S. Patent 5,811,799) in view of Primeaux (U.S. Patent 5,331,205).

Wu discloses an image sensor package having a wall with a sealed cover. An image sensor chip is mounted on a printed wiring frame over a substrate, which is plated with a spider web of plated conductors connecting the IC through via holes to the bottom of the substrate as output terminals. After wiring bonding the IC to the plated conductor, the package is sealed. A wall is erected around the image sensor chip and is covered with a transparent cover, which can be either glass or plastic, glued to the top of the wall. A lens may be placed in the middle of the cover for focusing.

Primeaux discloses a molded plastic package with wire protection. A wire bonded semiconductor die in a plastic package having minimal or no wire sweep is provided in which the semiconductor device comprises two different encapsulants. The semiconductor die and the wires including the bonds are completely enveloped by a first encapsulating compound.

which serves to protect and lock the wires in an upright position. A second encapsulating molding compound forms the package body through standard transfer molding techniques.

The Examiner admits that Wu does not teach a thermoset plastic, but cites Primeaux as teaching a sensor die protected by a thermosetting plastic.

However, the Examiner ignores Applicants' language in Claim 1 requiring an optically transparent window that "includes an *optically transparent* thermoset plastic field flattener lens" (emphasis added). There is absolutely no disclosure or suggestion by Primeaux that his thermoset plastic is transparent. The only disclosure concerning the thermoset plastic is found in Col. 4, lines 60-62: "a phenolic epoxy, an epoxy novolac resin, or other molding compound resin". Applicants are not aware that any of these plastics is known to be optically transparent. Interestingly, the cross-hatching used in the drawings for this encapsulant 22 is not for a transparent material.

Thus, the combination of the two references hardly suggests Applicants' claimed optically transparent thermoset plastic lens. Further, neither reference discloses or suggests the use of field flatteners as part of the cover plate for sensor packages. Consequently, the combination of the two references cannot fairly be said to disclose or even remotely suggest Applicants' claimed optically transparent thermoset plastic field flattener lens.

Reconsideration of the rejection of Claims 1-5, as amended, under 35 USC 103(a) as being unpatentable over Wu in view of Primeaux is respectfully requested.

Applicants appreciate that Claims 9 and 10 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants submit that, with the amendment to Claim 1, Claims 1-5, 7, 8, and 11 are also allowable.

The foregoing amendments and arguments are submitted to place the application in condition for allowance. The Examiner is respectfully requested to take such action. If the Examiner has any questions, he is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted.

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